

**Claims**

1. A signal processing circuit arranged to be used in a frequency modulated signal receiver comprising a complex filter connected to analog to digital  
5 conversion means, the filter comprising first and second complex filter stages and a voltage limiter disposed between the stages.
2. A circuit as claimed in claim 1 wherein the first filter stage is arranged to provide gain to a received signal.
3. A circuit as claimed in claim 2 wherein the first stage comprises at least  
10 three complex poles.
4. A circuit as claimed in claim 1 wherein the second filter stage is arranged to filter out higher order harmonics of a received signal.
5. A circuit as claimed in claim 4 wherein the second stage comprises at least two complex poles.
- 15 6. A circuit as claimed in claim 1 further comprising amplifier means disposed between the second filter stage and the analog to digital conversion means.
7. A circuit as claimed in claim 6 wherein the amplifier means comprises an automatic gain control amplifier having a signal level sensor and a controllable amplifier.
- 20 8. A circuit as claimed in claim 7 wherein the sensor is arranged to control the gain of the amplifier between two gain levels in dependence upon the level of a received signal.
9. A circuit as claimed in claim 7 wherein the level sensor has hysteresis.

10. A circuit as claimed in claim 1 wherein the analog to digital conversion means comprises a single analog to digital converter.
11. A circuit as claim 1 wherein the output from the second filter stage comprises two signals in phase quadrature, only one of which is input to the analog to digital converter means.
12. A circuit as claimed in claim 1 wherein circuit elements from the limiter to the analog to digital conversion means are arranged to limit the signal voltage to less than the maximum allowable range of the analog to digital conversion means.
- 10 13. A circuit as claimed in claim 1 further comprising a mixer, connected to the first filter stage.
14. A circuit as claimed in claim 13 wherein the mixer is connected to the first filter stage via DC decoupling means.
- 15 15. A circuit as claimed in claim 1 wherein the circuit is arranged to be used in a Bluetooth receiver.
16. A fm receiver incorporating a circuit as claimed in claim 1.